

### REMARKS

By Office Action mailed May 6, 2004, pending claims 1, 2, 4-7, 10-12, 14-17, 19-26, 29, 31-34, 36-39, 42-44, 46-49, 51-58 and 61 stand rejected and claims 3, 8, 9, 13, 18, 27, 28, 30, 35, 40, 41, 45, 50, 59, 60 and 62 stand withdrawn, reconsideration of which is respectfully requested in view of the above amendments and following remarks. Claims 1 and 32 have been amended. Claims 2-30 and 33-62 have been cancelled. Claims 1, 31 and 32 are now pending.

### Information Disclosure Statement

As noted by the Examiner, a copy of the reference entitled "Markush Chemical Structure Search Results for Porphyrin Type Compound with benzyl and phenyl groups, Chemical Abstract Service MARPAT Database, February 24, 2003" (reference AR) was inadvertently not submitted with Applicants' Second Supplemental Information Disclosure Statement mailed March 6, 2003. Accordingly, a copy of such reference is submitted herewith for consideration.

### Claim Amendments

In order to expedite prosecution, claims 1 and 32 have been amended to be directed to the species previously elected by Applicants in response to the Restriction Requirement mailed August 26, 2003. More specifically, claims 1 and 32 have been amended to recite a cobalt-porphyrin complex wherein  $R_1$  and  $R_2$  are both  $-(CH_2)_2C(=O)OCH(CH_3)_2$ ,  $R_3$  and  $R_4$  are both  $-CH_2CH_3$ , and  $L_1$  and  $L_2$  are both glycinate. Support for these amendments may be found in Example 1, pages 18-20 (namely, compound (1-6)). Applicants note that no new matter has been added by way of these amendments. Furthermore, these amendments are not, and should not be construed as, an acquiescence to the Examiner's rejections set forth in the Office Action mailed April 5, 2004 and discussed below. Rather, Applicants merely wish to expedite the allowance of a specific embodiment; and reserve the right to continue prosecution of the cancelled subject matter in one or more related applications. In this regard, Applicants have filed, contemporaneous with this Amendment, a continuation application to pursue such subject matter.

Rejection Under 35 U.S.C. §102(b)

Claims 1, 2, 10, 14, 21, 24-26, 29, 31-34, 42, 46, 53-58 and 61 stand rejected under 35 U.S.C. §102(b) as being anticipated by Goel et al. (U.S. Patent No. 5,929,064). More specifically, as noted by the Examiner, Goel discloses 7,12-diethyl and diethenyl 2,18-dipropionato cobalto porphine compounds (*i.e.*, cobalt-porphyrin complexes wherein R<sub>1</sub> and R<sub>2</sub> are both  $-(CH_2)_2C(=O)OH$ ). As set forth above, Applicants have amended claims 1 and 32 to specify that R<sub>1</sub> and R<sub>2</sub> are both  $-(CH_2)_2C(=O)OCH(CH_3)_2$ . Accordingly, Applicants submit that Goel does not anticipate pending independent claims 1 and 32 and request that this ground of rejection be withdrawn.

Rejections Under 35 U.S.C. § 103(a)

Claims 1, 2, 4-7, 10-12, 14-17, 19-26, 29, 31-34, 36-39, 42-44, 46-49, 51-58, and 61 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Goel, in view of Bommer et al. (U.S. Patent No. 4,675,338), Platzek et al. (U.S. Patent No. 6,136,841), and Niedballa et al. (U.S. Patent No. 5,275,801).

More specifically, the Examiner is of the opinion that Goel discloses 7,12-diethyl and diethenyl 2,18-dipropionato cobalto porphine compounds, as well as the use of such compounds in the treatment of obesity and cancer. Although the Examiner recognizes that the present invention differs from the teaching of Goel in that the 2,18 groups may be other than the propionic acid groups taught by Goel, the Examiner alleges that Bommer, Platzek and Niedballa address this deficiency. In this regard, the Examiner asserts that Bommer discloses the equivalency of propionic acids to their alkyl or benzyl esters in similar compounds used in the treatment of cancer, and that Platzek discloses the equivalency of ketone, amido, aminocarbonyl and ester substituted alkyl groups to acid substituted alkyl groups in other similar anti-cancer compounds. In addition, the Examiner alleges that Niedballa also discloses the equivalency of amido to acid as substituents of alkyl moieties in similar anti-cancer agents. In view of the foregoing, the Examiner asserts that "it would have been *prima facie* obvious at the time the invention was made to one of ordinary skill in the art to start with the teaching of the cited references to make Applicants' compounds wherein the length of the 2,18 substituents varies and

wherein the substitution is not only acid, but ester, ketone, amido, aminocarbonyl, etc. and to expect to obtain compounds useful in treating obesity and cancer" (see pages 3-4 of the Office Action).

Applicants respectfully disagree with the Examiner's conclusion. However, in order to expedite prosecution, Applicants have amended pending independent claims 1 and 32 to specifically recite a cobalt-porphyrin complex wherein  $R_1$  and  $R_2$  are both  $-(CH_2)_2C(=O)OCH(CH_3)_2$ ,  $R_3$  and  $R_4$  are both  $-CH_2CH_3$ , and  $L_1$  and  $L_2$  are both glycinate. Applicants submit that none of the foregoing references, alone or in any combination, would lead one of ordinary skill in the art to modify the compounds disclosed therein in order to yield this complex.

In chemical cases, the courts have consistently held that structural similarity alone is not sufficient to establish obviousness. *See, e.g., Eli Lilly and Co. v. Zenith Goldline Pharmaceuticals, Inc.*, 2001 U.S. Dist. LEXIS 18361 at \*24 (S.D. Indiana). In particular, for a chemical compound, a *prima facie* case of obviousness requires not only that the prior art compounds are structurally similar, but that the prior art reference itself must provide a reason or motivation for one skilled in the art to make the claimed compounds. *See, e.g., Yamanouchi Pharmaceutical Co., Ltd. v. Danbury Pharmacal, Inc.*, 231 F.3d 1339, 1343 (Fed. Cir. 2000) and *In re Dillion*, 919 F.2d 688, 692 (Fed. Cir. 1990) (en banc). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. *See In re Napier*, 55 F.3d 610, 613 (Fed. Cir. 1995). The mere fact that the prior art could be modified would not make a modification obvious unless the prior art suggested the desirability of such a modification. *See In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984).

As conceded by the Examiner, Goel provides no motivation to modify the 2,18 propanoic acid groups of the amino acid/cobalt (III) mesoporphyrin IX complexes disclosed therein. With regard to the Examiner's reliance on Bommer, Platzek and Niedballa to provide such motivation, Applicants note that the porphyrins disclosed in such references are not amino acid/cobalt (III) mesoporphyrin IX complexes. Contrary to the Examiner's assertion, none of the cited publications, alone or in combination, contains any teaching or suggestion that the

porphyrin substitutions disclosed therein are generally applicable to all types of porphyrin complexes, such as the amino acid/cobalt (III) mesoporphyrin IX complexes of Goel. Furthermore, Applicants note that none of the cited references discloses the specific pattern of substitution claimed by Applicants in pending claims 1 and 32.

In view of the foregoing, Applicants submit that the cited references do not singly, or in any motivated combination, contain any teaching, suggestion or motivation to modify the compounds disclosed therein in order to produce the claimed complex of the present invention. Accordingly, Applicants submit that the cited references fail to establish a *prima facie* case of obviousness against claims 1, 31 and 32, and request that this ground of rejection be withdrawn.

In view of the above amendments and remarks, allowance of claims 1, 31 and 32 is respectfully requested. A good faith effort has been made to place this application in condition for allowance. However, should any further issue require attention prior to allowance, the Examiner is requested to contact the undersigned at (206) 622-4900 to resolve the same. Furthermore, the Commissioner is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

Tomas R. Szabo et al.

SEED Intellectual Property Law Group PLLC



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EWV:cw

Enclosure:

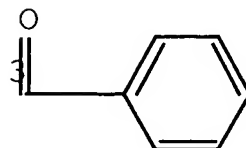
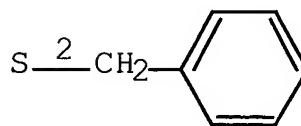
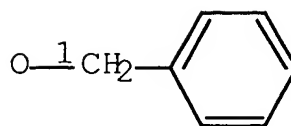
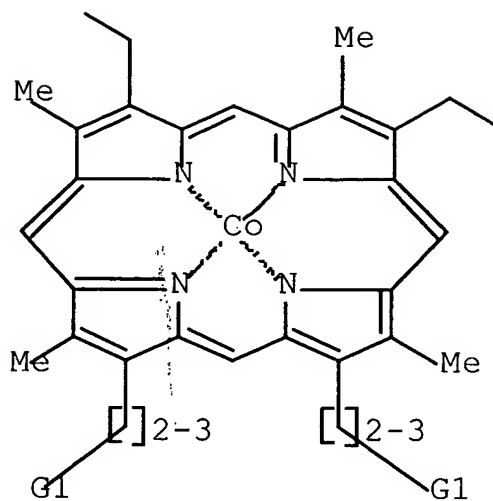
Copy of "Markush Chemical Structure Search Results for Porphyrin Type Compound with benzyl and phenyl Groups, Chemical Abstract Service MARPAT Database, February 24, 2003"

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G1 [01], [02], [03]

# Markush Structure Search



## Table of Contents

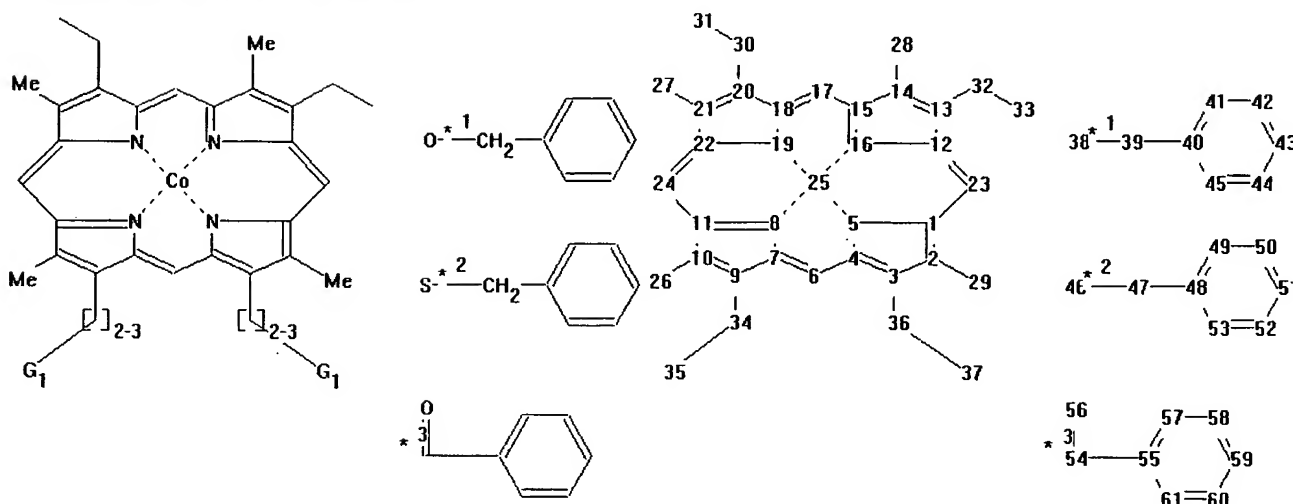
### **SECTION 1**

<b>Markush Structure Query</b>	<b>1</b>
<b>Markush Structure Query</b>	
<b>Parameters</b>	<b>1</b>
<b>Markush Structure Search</b>	<b>2</b>

## Section

# 1

## Markush Structure Query



## Markush Structure Query Parameters

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 ring nodes :  
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
 24 25 40 41 42 43 44 45 48 49 50 51 52 53 55 57 58 59 60 61  
 chain bonds :  
 2-29 3-36 9-34 10-26 13-32 14-28 20-30 21-27 30-31 32-33 34-35 36-37  
 38-39 39-40 46-47 47-48 54-55 54-56  
 ring bonds :  
 1-2 1-5 1-23 2-3 3-4 4-5 4-6 5-25 6-7 7-8 7-9 8-11 8-25 9-10 10-11  
 11-24 12-13 12-16 12-23 13-14 14-15 15-16 15-17 16-25 17-18 18-19 18-20  
 19-22 19-25 20-21 21-22 22-24 40-41 40-45 41-42 42-43 43-44 44-45 48-49  
 48-53 49-50 50-51 51-52 52-53 55-57 55-61 57-58 58-59 59-60 60-61  
 exact/norm bonds :  
 1-5 4-5 5-25 8-25 16-25 18-19 19-22 19-25 34-35 36-37 54-56  
 exact bonds :  
 2-29 3-36 9-34 10-26 13-32 14-28 20-30 21-27 30-31 32-33 38-39 39-40





46-55 47-48 54-55  
normalized bonds :  
1-2 1-23 2-3 3-4 4-6 6-7 7-8 7-9 8-11 9-10 10-11 11-24 12-13 12-16  
12-23 13-14 14-15 15-16 15-17 17-18 18-20 20-21 21-22 22-24 40-41 40-45  
41-42 42-43 43-44 44-45 48-49 48-53 49-50 50-51 51-52 52-53 55-57 55-61  
57-58 58-59 59-60 60-61

G1:[\*1],[\*2],[\*3]

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
20:Atom 21:Atom 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom  
29:Atom 30:Atom 31:Atom 32:CLASS 33:Atom 34:Atom 35:Atom 36:CLASS 37:Atom  
38:CLASS 39:CLASS 40:Atom 41:Atom 42:Atom 43:Atom 44:Atom 45:Atom 46:CLASS  
47:CLASS 48:Atom 49:Atom 50:Atom 51:Atom 52:Atom 53:Atom 54:CLASS 55:Atom  
56:CLASS 57:Atom 58:Atom 59:Atom 60:Atom 61:Atom

## Markush Structure Search

=> search l4 sss full  
CHANGE MLEVEL FOR ANY NODES? Y/(N)/?:n  
CHANGE ECLEVEL FOR ALL NODES AND GROUPS? (LIMITED)/UNLIMITED/N/?:limited  
ISOLATE ALL RINGS IN THE STRUCTURE? (Y)/N/?:n  
FULL SEARCH INITIATED 19:09:08 FILE 'MARPAT'  
FULL SCREEN SEARCH COMPLETED - 213 TO ITERATE

0 ANSWERS

100.0% PROCESSED 213 ITERATIONS  
SEARCH TIME: 00.00.04

L6

0 SEA SSS FUL L4 (MODIFIED ATTRIBUTES)